CLASSIFICATION CONFIDENTIAL ~~CONFIDENTIAL~~

50X1-HUM

CENTRAL INTELLIGENCE AGENCY
INFORMATION FROM
FOREIGN DOCUMENTS OR RADIO BROADCASTS

REPORT

CD NO.

COUNTRY	USSR	DATE OF INFORMATION	1949
SUBJECT	Economic - Peat mining		
HOW PUBLISHED	Monthly periodical	DATE DIST.	21 Jul 1950
WHERE PUBLISHED	Moscow	NO. OF PAGES	8
DATE PUBLISHED	Jan - Mar 1950		
LANGUAGE	Russian	SUPPLEMENT TO REPORT NO.	

THIS IS UNEVALUATED INFORMATION

SOURCE Torfyanaya Promyshlennost'.

PROGRESS IN MECHANIZATION OF SOVIET PEAT MINING

PEAT MACHINERY PLANTS TOP PLAN -- Torfyanaya Promyshlennost', No 3, Mar 50

Plants of the Main Administration of Peat Machine Building exceeded the fourth year plan of the postwar Five-Year Plan 110 percent and, in 1949, all plants reached the production level planned for 1950. In the same year the plants mastered the production of five new machine types and are now prepared to handle any complex peat machine.

Production of equipment and spare parts increased considerably during the Fourth Five-Year Plan. The rate of increase in gross and commodity production during the Fourth Five-Year Plan was as follows (in percent):

	1946	1947	1948	1949
Gross production	100	125.2	148.5	192.3
Commodity production	100	121.9	139.3	184.0

Labor productivity increased 62.4 percent from 1946 to 1949, and housing space from 13,087 square meters in January 1947 to 20,210 square meters in January 1950. The 1950 plan calls for a 20-percent increase in gross production and mastering of the production of 12 new types of peat machines. -- I. N. Rulev

FROZEN GROUND REMOVAL IN URAL ENTERPRISES DEBATED -- Torfyanaya Promyshlennost', No 1, Jan 50

Since frozen ground in the Ural Region does not thaw naturally until 10 June, measures for its removal must be taken in order to begin peat extraction according to plan. The cost of this operation is about 1.5 rubles per ton of extracted peat.

CONFIDENTIAL

CLASSIFICATION CONFIDENTIAL

STATE	X	NAVY	X	NSRB	DISTRIBUTION
ARMY	X	AIR	X	FBI	

There are two main methods for removing frozen ground: hastening natural thawing by artificial means and breaking up the frozen ground before it has thawed completely.

The first method requires the removal of snow during the thaw period. Special tractor-drawn plows have been constructed for this type of work. These plows are also used to skim off the top layers of thawed ground, thus hastening ground thawing. However, there are several disadvantages to this method: banks are formed on one side of the pit and slopes on the other, the thawed stratum is not completely removed because of the irregular surface of the pit, and manual labor is required to supplement machines. Tests showed that a specially constructed bulldozer or grader would be very effective in this type of work.

When it is not possible to remove the frozen ground by removing the top thawed layer, the frozen ground is quickly and completely removed by blasting.

Tests have shown the following cost per cubic meter of removing frozen ground 0.45 meter deep:

1. Manually removed thawed ground -- 1.54 rubles

2. Thawed ground removed by a tractor-pulled triangular plow -- 1.04 rubles.

3. Thawed ground removed by a type of bulldozer without mechanized removal of earth at the banks -- 0.517 ruble

4. Frozen ground removed by blasting -- 4.87 rubles

Breaking up the frozen ground by milling methods has proved unsatisfactory in a series of tests.

Comparative data of operational costs show that the most economical method of removing frozen ground is by a specially constructed bulldozer or grader. However, this method must be supplemented by blasting to prepare the peat fields for normal operations. Natural conditions should be utilized as much as possible in removing this frozen ground. -- A. A. Yagunov

TUM-3 CONVEYOR SPEEDS PEAT GATHERING -- Torfyanaya Promyshlennost', No 2, Feb 50

In 1949, two TUM-3 conveyors were used on the Losinyy Peat Enterprise of the Sverdlovsk Trust. Each conveyor worked independently, gathering peat extracted by the excavator. They received their electrical supply from overhead lines set up to supply power for the excavator.

The conveyors were manually loaded with peat which had been spread out by spreader machines to dry across the entire width of the drying area. These conveyors then deposited the peat in stacks along the edge of the drainage canals.

Operating indexes of the TUM-3 machine are as follows:

	TUM No 15	TUM No 13
No of working days	93	73
No of shifts	1.1	1
Productivity of TUM-3 units per shift (in tons)	156.8	158.6
Seasonal productivity of TUM-3 (in 1,000 tons of peat of natural moisture content)	16.3	11.6
Seasonal productivity of TUM-3 (in 1,000 tons of peat of standard moisture content)	13.7	10.4

The above table shows that the seasonal productivity of one conveyor working one shift is 10,000-14,000 tons. A single conveyor working two shifts can gather all the peat extracted by one excavator.

One mechanic, 18 to 20 loaders, and three to six workers forming the stacks worked in conjunction with the TUM-3 conveyor, which was serviced by the excavator electricians on duty.

Data on the 1949 operations showed that utilization of the TUM-3 conveyor increases labor productivity 25 percent and reduces costs of gathering peat 10-15 percent. -- Ye. G. Troyb

TUM CONVEYORS USED IN SHATURA PEAT TRUST -- Torfyanaya Promyshlennost', No 2, Feb 50

In 1949, 171,300 tons of peat were gathered by TUM conveyors in the Petrovsko-Kobelevskiy and Baksheyevskiy enterprises of the Shatura Peat Trust. The former enterprise used eight TUM-2 machines, and the latter, nine TUM-3 and TUM-5 machines. They were operated in groups of two or three units.

Semimechanized peat gathering by TUM conveyors cost 7.52 rubles per ton in the Petrovsko-Kobelevskiy Enterprise and 6.24 rubles per ton in the Baksheyevskiy Enterprise, while the average cost for gathering peat manually in this period was 9.36 and 7.90 rubles, respectively. These figures do not include the cost of machine maintenance and training of personnel which, based on other machines (UMP-4, UMK), would be one ruble per ton in the Petrovsko-Kobelevskiy Enterprise and 1.20 rubles per ton in the Baksheyevskiy Enterprise. Thus, the cost of semimechanized loading is only 7-9 percent less than that of manual loading.

Manual loading of the TUM conveyor makes up 65-80 percent of the total labor consumption involved, thus showing the need for further mechanization of peat gathering. -- V. S. Yefimov

TEMP EXCAVATOR RECOMMENDED -- Torfyanaya Promyshlennost', No 1, Jan 50

The TEMP excavator is a multiple bucket, self-propelled excavator which was recommended by a commission of the Ministry of Electric Power Plants for industrial use in October 1948. It frequently operates in conjunction with a chain or "key" (klavishnyy) type separator which separates stumps and wood from the raw peat. Of these two machines, the "key" type separator is the most efficient as it is more strongly constructed and has less tendency to jam. The following table gives data on these separators.

Type of Separator	Stumps in Deposit (%)	Depth of Deposit (meters)	Stumps Removed (%) Separator	Stumps Removed (%) Manually	Peat Carried Off (%)	Workers Supplementing TEMP	Time Lost Because of Separator
Chain type	3.4	3.2	62	38	2.9	4	13.0
"Key" type	2.9	2.5	65	35	3.4	3	3.2

The "key" type separator should be attached to the TEMP excavator whenever the number of stumps in the deposit is 2 percent or higher.

Technical characteristics of the TEMP-2 after modifications are:

Bucket capacity (liters)	130
No of buckets	15
Velocity of bucket chain (meters/sec)	0.41
Maximum traction strength of bucket chain (kg)	4,000
Length of bucket arm (meters)	8.64
Velocity of elevating bucket arm (around axis of tension wheel) (meters/min)	5.0
Spacing of bucket chain links (mm)	320
Limit of excavation depth (meters)	4.25
Limit of face width (meters)	12.25
Rate of turn of machine body on carriage:	
Maximum rpm	0.055
Minimum rpm	0.0236
Turning angle of upper platform (degrees)	65
Receiving conveyor:	
Width of track (meters)	0.86
Velocity of track (meters/sec)	0.45
Angle of slope (degrees)	21.5
Crusher:	
Diameter of rotor (at end of blades) (meters)	1.0
No of turns per minute of rotor	600
No of blades	7

Outgoing conveyor:	
Width of track (meters)	0.67
Velocity of track (meters/sec)	0.55
Turning velocity (rpm)	1.63
Caterpillar mount:	
Distance between centers of drive wheel and idler wheel (meters)	6.0
Total width of track (meters)	3.7
Length of track (meters)	1.5
Velocity (meters/hr)	334
Average pressure of track on ground surface (kg/sq cm)	0.217
Maximum pressure (on edge of track) (kg/sq cm)	0.318
Weight of excavator including electrical equipment (tons)	39.0
Capacity of electric motor (kw)	161.6
Working load (volts)	500
Transformer 240 or 320 (kv-a)	1

A hammer-type crusher of the TP-4 peat press can be mounted on the TEMP-2 for processing work.

The amount of work the excavator with the separator attached can do is determined by the number of stumps in the deposit. For example, with no stumps at all, 160 cubic meters can be extracted in an hour; when there is a one-percent stump content, only 135 cubic meters per hour; 2-percent stump content, 128; and 5-percent stump content, only 70.

The number of workers needed to supplement the work of the TEMP-2 excavator also depends on the percentage of stumps in the deposit as is shown in the following table:

Stump Content of Deposit	No of Supplementary Workers	Remarks
Up to 1 percent	2	With separator
From 1 to 2 percent	3	
Over 2 percent	3	With separator

The crew of the TEMP excavator and two electric spreading machines consists of one excavator operator, one excavator assistant, one shift electrician, and two spreader machine operators.

First series of the TEMP-2 excavator will be made in 1950 by a factory of Glavtorfmash (Main Administration for Peat Machinery). -- K. K. Naumov, V. I. Chistyakov

SMALL ELECTRICAL PEAT PUMP IMPROVES HYDROPEAT EXTRACTION -- Torfyanaya Promyshlennost', No 2, Feb 50

A small electric hydropeat pump was designed in 1947 for the TEAMG electric unit for pumping fine hydropeat. It consists of a pump which processes the hydropeat and forces it through pipes to reservoirs 600-800 meters away. The whole assembly is suspended from the "New Standard" crane. Power is supplied by a MA-205 2/8 electric motor of 36 kilowatts which runs at 730 revolutions per minute.

An experimental model of the peat pump was made by a peat-machine-building plant of the Ministry of Local Fuel Industries, Belorussian SSR, and was tested by the Osintorf Peat Industry in September 1949. Tests showed that the peat pump was very efficient since it operated without interruption in stumpy, hilly deposits (swamp grass, peat moss) 20 to 25 percent decomposed at a production rate of 250-300 cubic meters per hour and at 22-37 percent efficiency. The electric motor supplied more power than was necessary and could be reduced to 30 kilowatts.

The following table shows the advantages of the electric pump unit over the electric hydropeat elevator:

Indexes	Electric Pump Units	Electric Hydro-elevator Units
No of shifts	3	3
Average seasonal productivity of one unit (in tons of air-dried peat)	14,000	9,800
Power requirement of unit (kw)	89	81.5
Consumption of electric power per ton of air-dried peat (kw-h)	10.75	13.9
Labor consumption per 1,000 tons of extraction (not including drying and gathering)		
Workers	1.5	2.1
Working days	127.0	182.0

-- V. V. Sadovnichiy

DRUM MILLING MACHINES IMPROVE IN 1949 -- Torfyanaya Promyshlennost', No 2, Feb 50

Since the FD-4 drum milling machine worked unsatisfactorily in 1948, an improved version, the FD-4A, was produced. During the 1949 season 212 machines of both the FD-4 and FD-4A types were used by peat enterprises. Most of the defects noted in 1948 were absent in 1949. However, one of the main disadvantages remained: both the FD-4 and FD-4A continued to operate at a slant, thus taking off an uneven layer of peat. This was caused mainly by the poor construction of the milling drum, for which the VNIITP (All-Union Scientific Research Institute of Peat Industry) is entirely responsible. Some parts were also observed to wear out rapidly.

The appended table gives data on drum milling machines used in various trusts and enterprises in 1949. The chart reveals that time lost due to poor organization (lack of fuel, lubricants, personnel, etc.) and defective tractors was comparatively high, while defective milling drums caused relatively little delay. All in all, operation of drum milling machines can be considered satisfactory. -- G. A. Smirnov

Lost Time (in hours)

Trusts	No of FD-4 Machines Used	No of Hours of Gross Operation (Valovaya Rabota)	Total	Tractors	Milling Drums	Technical Maintenance	Weather	Lack of Work	Other
Shatura	24	10,144	2,245	340	181	220	381	552	571
Orekhovskiy	18	10,226	2,845	183	194	202	1,031	633	601
Leningrad	50	34,978	8,198	1,423	1,280	1,130	1,874	1,912	579
Kalinin	8	7,370	936	147	120	143	444	82	--
Yaroslav	30	18,251	3,748	446	132	692	632	1,217	629
Ivanov	24	21,185	4,507	372	104	11	950	3,027	43
Gorkiy	31	32,453	5,541	420	371	631	1,916	1,264	939
Kirov	17	3,260	544	43	10	81	104	130	176
Pal'tso Peat Enterprise	6	906	163	67	3	--	57	13	23
Bryansk Peat Enterprise	4	1,785	302	15	48	42	93	74	30
Main Administration of Peat Enterprise	212	140,558	29,028	3,456	2,443	3,152	7,482	8,904	3,591

Lost Time (in hours)

Trusts	No of Hours of Net Operation (Chistaya Rabota)	Milled Area (ha)	Coefficient of Working Time of Machine	Productivity per Hour of Gross Operation (ha)	Extraction per Drum Milling Machine per Season
Shatura	7,899	11,256	0.775	1.10	470.0
Orekhovskiy	7,382	9,733	0.72	0.95	540.0
Leningrad	26,780	32,831	0.77	0.94	657.0
Kalinin	6,434	4,960	0.87	0.66	620.0
Yaroslav	14,503	17,728	0.79	0.97	592.0
Ivanov	16,678	25,822	0.795	1.22	1,075.0
Gorkiy	26,912	34,123	0.83	1.05	1,097.0
Kirov	2,715	4,786	0.85	1.47	281.0
Pal'tso Peat Enterprise	743	1,001	0.77	1.10	167.0
Bryansk Peat Enterprise	1,483	2,225	0.83	1.24	557.0
Main Administration of Peat Enterprise	111,529	144,465	0.798	1.03	685.0

- E N D -

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

Sanitized Copy Approved for Release 2011/08/31 : CIA-RDP80-00809A000600330209-3